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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/744,230	03/21/2001	Wouter Cornelis Puijk	PEPSCAN-1(P1	3929

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EXAMINER

YANG, NELSON C

ART UNIT

PAPER NUMBER

1641

DATE MAILED: 02/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/744,230

Applicant(s)

PUIJK, WOUTER CORNELIS

Examiner

Nelson Yang

Art Unit

1641

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 17 February 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date: \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election without traverse of claims 1-13 in the reply filed on December 10, 2004 is acknowledged.
2. Claims 14-21 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected group, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on December 10, 2004.

### ***Response to Amendment***

3. Applicant's cancellation of claims 14-21 is acknowledged and has been entered.

### ***Claim Objections***

4. Claim 6 is objected to because of the following informalities: it is unclear if line 2 of claim 6 is intended to read "by introduction of -NH, groups in," or "by introduction of -NH<sub>2</sub> groups in". Appropriate correction is required.
5. Claim 13 is objected to because of the following informalities: it is unclear if line 6 of claim 13 is intended to be interpreted as "lose" or "less".

### ***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:  
  
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
7. Claims 1-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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8. Claim 1 recites the limitation "the carrier bane" in line 8. There is insufficient antecedent basis for this limitation in the claim.

9. Claim 1 recites the limitation "the carrier bass" in line 9. There is insufficient antecedent basis for this limitation in the claim.

10. Regarding claims 3 and 4, the phrase "such as" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

11. Regarding claim 8, it is unclear if the statement that the polymerized adhesive layer of a relatively slight thickness "preferably a thickness of at the most a few atoms or relatively flat chains" is a required limitation.

12. The term "relatively slight thickness" and "relatively flat" in claim 8 is a relative term which renders the claim indefinite. The term "relatively slight thickness" and "relatively flat" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is unclear if the "preferably a thickness of at the most a few atoms" is intended to be an actual limitation of the adhesive layer, and it is unclear what would be relatively flat and how it would apply to the thickness of the layer.

13. Regarding claim 11, it is unclear if the statement that the carrier base "preferably having a surface roughness in the order of magnitude of atomic roughness or slightly thereabove" is a required limitation, and if so, the range of surface roughness that would be encompassed by such a limitation.

14. This is also applicable to the use of the term "preferably" in claim 13.

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15. The term "particularly low" in claim 11 is a relative term which renders the claim indefinite. The term "particularly low" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is unclear if the "preferably preferably having a surface roughness in the order of magnitude of atomic roughness or slightly thereabove" is intended to be an actual limitation of the adhesive layer, and if so, the range of surface roughness that would be encompassed by such a limitation.

In addition it is unclear what is meant by the limitation "having a particularly low surface roughness of at least the fare to which the plastic is applied" in the third line of claim 11.

16. With respect to claim 12, it is not entirely clear if the base carrier is the same as the carrier base recited in claim 1.

Claim 13 recites the limitation "the carrier" in line 4 of the claim. There is insufficient antecedent basis for this limitation in the claim. It is unclear if the carrier refers to the carrier surface or to the carrier base.

17. The remaining claims are indefinite due to their dependence on an indefinite claim.

***Claim Rejections - 35 USC § 103***

18. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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19. Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Armstrong et al [US 4,233,396] in view of Sutton [US 5,262,297].

With respect to claims 1, 2, 7, Armstrong et al teach a method of forming a polymer layer comprising pouring a polymerisable liquid including a photosensitive catalyst into a suitable mould, irradiating the liquid until a partially polymerised self-supporting moulded article is formed, then removing the moulded article from the mould (column 2, lines 60-68). The further shaping of the article may be effected, for example, by vacuum forming, compression moulding, or, where the article is sufficiently flexible, by draping the article as a sheet over a mould. The article, once it has been provided with its final shape, is cured by exposing the article to a suitable radiation which may be visible light, ultra violet light or an electron beam. The radiation actuates the photosensitive catalyst which initiates copolymerisation of e.g. the ethylenically unsaturated polymer and the ethylenically unsaturated monomer, the polymer and monomer copolymerising to produce a rigid article. Alternatively, the final curing may be effected at least in part by heating the article (column 3, lines 6-25). Armstrong does not specifically teach reducing the surface roughness of the carrier surface.

Sutton, however, does teach the use of amine linkers (column 24, example 10) and amino linkers (column 29, example 12) and further teaches that linkers enable carboxy groups to be more easily activated by carbodiimides or other activation agents when biological compounds are attached (column 5, lines 18-27). While Sutton does not specify that this reduces the carrier surface, the step of adding amino groups would inherently reduce the surface roughness, according to what applicant discloses in the specification (p.7, lines 13-20).

Therefore it would have been obvious in the method of Armstrong et al to have amine and amino linkers, as disclosed by Sutton, in order to enable the carboxy groups to be more easily activated by carbodiimides.

20. With respect to claims 3, 4, Armstrong et al teach groups such as COOR, where R may be an alkyl group (column 4, lines 13-27).
21. With respect to claim 5, Armstrong et al teach the presence of methyl acrylate in the carrier surface (column 4, lines 28-30).
22. With respect to claims 6, Armstrong et al teach a method of forming a polymer layer comprising pouring a polymerisable liquid including a photosensitive catalyst into a suitable mould, irradiating the liquid until a partially polymerised self-supporting moulded article is formed, then removing the moulded article from the mould.
23. With respect to claim 8, Sutton teaches the use of a heat-activated adhesive (column 33, example 14).
24. With respect to claim 9, Sutton teaches the use of amino linkers (column 29, example 12) and further teaches that linkers enable carboxy groups to be more easily activated by carbodiimides or other activation agents when biological compounds are attached (column 5, lines 18-27).
25. With respect to claim 10, Sutton teaches that the amino linker groups are attached to DNA (column 29, lines 55-58), which is a biopolymer (see polymer, Wikipedia).
26. With respect to claim 12, Armstrong et al teach that the base carrier may be glass plates (column 5, example 1).

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27. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Armstrong et al [US 4,233,396] in view of Sutton [US 5,262,297] as applied to claims 1-10, 12 above, and further in view of Oldenburg et al [US 6,027,695].

Armstrong et al teach a method of forming a polymer layer comprising pouring a polymerisable liquid including a photosensitive catalyst into a suitable mould, irradiating the liquid until a partially polymerised self-supporting moulded article is formed, then removing the moulded article from the mould, as discussed above. Armstrong et al fails to teach that the carrier surface comprises at least one substantially spherical body, obtaining a matrix of wells having a volume of less than 3  $\mu$ L.

Oldenburg et al, however, do teach microwells having a volume of 0.5 microliters or less (column 5, lines 40-45), and that the bottoms of the wells may be arcuate (column 6, lines 15-18), and that the walls may also be concave or convex (column 6, lines 40-46). Oldenburg et al further teach that the larger the quantity of wells that can be processed, the higher the efficiency of the screening process, and therefore it is desirable to concentrate a large number of wells in each microtiter plate by using microwells rather than conventional wells (column 1, lines 61-67).

Therefore it would have been obvious in the method of forming the polymer layer of Armstrong et al, to have spherical microwells having a volume less than 3  $\mu$ L, in order to concentrate a large number of wells in each microtiter plate in order to increase the efficiency of the screening process.

### ***Conclusion***

28. No claims are allowed.



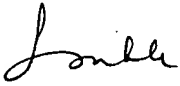
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29. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nelson Yang whose telephone number is (571) 272-0826. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Long V Le can be reached on (571)272-0823. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

30. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Art Unit 1641

  
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02/18/05